

Industrial SPDES Permit Fact Sheet (Permittee-Initiated Modification)

Fleischmann's Vinegar Company, Inc., SPDES Permit No. NY0002585, DEC ID: 8-5438-00001/00001

I. SUMMARY OF PROPOSED PERMIT CHANGES

A State Pollutant Discharge Elimination System (SPDES) permittee-initiated modification (PIM) is being proposed. Changes within the draft permit, compared to the currently-effective permit, are summarized below, with details of the changes that were added in this draft permit modification.

- Monthly UOD and Temperature limits for effluent discharges at Outfall 001 based upon background flow from Outfall 003.
- Limit, Dissolved Oxygen, 7.0 mg/l.
- Elimination of internal monitoring locations 01A-01C due to revised methodology of determining final effluent limits.

Department update of a permit typically includes updated forms with the latest general conditions.

II. BACKGROUND INFORMATION

This SPDES permit modification details how the proposed revisions are based on facility effluents, receiving water characteristics, and the applicable federal and state requirements: laws, regulations, policy, and guidance.

A. Administrative History

The existing permit included UOD monitoring with a limit of 42 mg/l, and allowed discharge only during the months of March and April. This permit modification proposes flow and temperature limitations, developed to allow specific UOD discharges on a year-round basis based upon streamflow conditions, in combination with continuous cooling water discharge.

B. Outfall and Receiving Water Information

The facility discharges effluent and stormwater to State waters via the outfalls and at the locations listed below.

Outfalls & Monitoring		Latitude/Longitude	Discharge Description	Receiving Water
Number	Parameters			
001	Flow, CBOD, pH, TSS, UOD, TKN, Ammonia, DO	43° 10' 36.3"/76° 52' 57.8"	Effluent, to Unnamed Tributary	Tributary to Beaver Creek
002	Flow	43° 10' 36.5"/76° 53' 10.9"	Sanitary wastewater, to septic tank leach fields.	Groundwater, Class GA
003	Flow, Temp., etc.	43° 10' 35.3"/76° 52' 59.4"	Non-contact cooling water, plus stormwater.	Tributary to Beaver Creek
004	Flow	43° 10' 40.5"/76° 53' 03.1"	Site groundwater from drain tile system North of main plant to surface discharge northeast of Holding Pond #3.	Groundwater, Class GA

Specific Outfalls affected by the SPDES permit modification are 001 and 003. Outfalls' location coordinates, surface water classes of 6 NYCRR Parts 800 – 941, and names of receiving waters (Unnamed Tributary to Beaver Creek, Class C) are in the table *Outfall & Receiving Water Locations*; the end of this Fact Sheet. Best usages and other requirements for the receiving water class is as specified in 6 NYCRR § 701.8, Class C fresh surface waters: "The best usage of Class C waters is fishing. These waters shall be suitable for fish propagation and survival ... and for primary and secondary contact recreation, although other factors may limit the use for these purposes."

Historic Basis of the Restricted Annual Period for Effluent Discharges

Effluent discharge had up to the present been allowed only during the snowmelt months of March-April, based upon the Unnamed Tributary to Beaver Creek being subject to warm season intermittency, while effluent BOD levels required a streamflow providing sufficient assimilation capacity.

Revision of the Annual Schedule for Effluent Discharges

Prior to and with the 2012 SPDES permit application, the permittee described the historic March-April discharge period as restrictive of effluent management and production, and requested options for year-round discharge when their effluent met limits. In additional discussions with the Department, the permittee noted the facility's continuous non-contact cooling water (NCCW) flow as being a significant, continuous additional discharge contributing to the flow in the Unnamed Tributary to Beaver Creek. Applicable regulatory standards and water and streamflow constraints were discussed with the water quality engineer, who then developed limitations that allow the discharge to meet the standards. The limitations were developed to allow conditional monthly discharges of effluent entering Unnamed Tributary to Beaver Creek and allow additional operational flexibility.

Water Quality-Based Critical Flow Considerations: Unnamed Tributary to Beaver Creek

Unnamed Tributary to Beaver Creek flow is reported as intermittent. The proposed limits rely conservatively on only Outfall 001 and 003 flow contributions. DEC TOGS 1.3.1 guidelines for low and intermittent flows also apply to water quality. Permit writer review of USGS, EPA, SUNY-Brockport, other technical literature, and discussion with USGS, found no reliable streamflow information for Beaver Creek & Tributaries. A 30Q10 flow is estimated from the default NYS regional 1.2 multiplier of the 7Q10 flow.

Discussions between the permittee, water quality, and permitting staff determined that a flow rate-based assimilative capacity could be considered for the receiving water to allow the discharge of wastewater at Outfall 001 at rates and UOD concentrations proportional to the flow rate of water at outfall 003. This determination is based upon the fact that the flow at Outfall 003 is continuous when the facility is in operation; that the flow at 001 can be regulated and controlled based on UOD in Holding Pond #3 and the flow rate at Outfall 003; and that the discharge temperature at outfall 003 does not exceed 86 degrees F, the temperature of the acetators which are cooled by the water discharging to Outfall 003.

UOD requirement for effluent (and cooling water) must be such that the total inflow complies with the minimum Part 703 DO requirements for a Class C receiving water, and any other requirements the water quality engineer considers necessary. Critical receiving water (seasonal) temperatures are from water quality review protocols for average seasonal temperatures, for waters in Wayne County, NY region. Stream pH, hardness and/or salinity are from recent DEC Bureau of Water Assessment reports, and 2005 permit water quality reviews.

Impaired Waterbody Information

Department 2007 Priority Waterbody listing at (http://www.dec.ny.gov/docs/water_pdf/pwllontcent.pdf) provides that Beaver Creek and Minor Tribs. (Watershed Number 0302) are 'Unassessed.' Impairment status of the Unnamed Tributary to Beaver Creek or Beaver Creek are not available There are no TMDLs

C. Discharge Composition

Effluent quality is summarized below and in the *Pollutant Summary Table* at the end of this fact sheet, based upon the Discharge Monitoring Reports (DMRs) of 3/2013 to 5/2016. Permittee-submitted weekly Holding Pond #3 monitoring data was also reviewed by the permit writer, along with recent data for effluent variability and UOD characteristics that might affect compliance under the proposed discharge scenarios. The DMR values considered satisfy TOGS 1.2.1 requirements for statistical values, *EPA Technical Support Document For Water Quality-based Toxics Control – Appendix E; USEPA Office of Water, March 1991*.

Wastewater Flows

The facility's effluent discharge capacity at Holding Pond #3 (effluent lagoon) is approximately 6 million gallons/year.

Manufacture is of food-quality alcohols, apple cider, cooking wines, and vinegars. Onsite groundwater wells and municipal water sources provide water supply. Process wastewater treatment includes two (2) aeration units and an aerated holding/settling pond, in series.

D. Compliance History

For 2013-2016, exceedances of the 42 mg/l UOD limit for Outfall 001 were reported. Prior to discharging, the facility had prequalified the water from data obtained from the required testing of the previous internal Outfall 01D (the final holding pond prior to discharge) for parameters used to calculate UOD, and had confirmatory acceptable results that the water was in compliance with the UOD limit in the permit prior to discharging to Outfall 001. For 2013-2016 no notices of violation or enforcement proceedings were commenced by the Department.

III. PROPOSED PERMIT REQUIREMENTS

Sections 101, 301(b), 304, 308, 401, 402, and 405 of the CWA provide the basis for effluent limitations and other conditions in the draft permit. The NYSDEC evaluates discharges according to these sections of the CWA, New York State ECL, and relevant federal/state regulations, policy and guidance; to determine draft permit conditions. For existing permittees the previous permit provides a basis for the next. Revisions are implemented where justified by changed facility conditions and/or in response to regulatory updates.

A. Effluent Limitations

Existing **technology-based effluent limits (TBELs)** have been retained for the permit modification. The TBELs represent the minimum level of treatment for industrial point sources, from currently available treatment technologies and/or Best Management Practices (BMPs). Department water quality evaluation determines if results from treatment technology controls will cause exceedances of water quality criteria. If there is reasonable potential for exceedances, **water quality-based effluent limits (WQBELs)** must be included. The WQBELs set are effluent and cooling water UOD and temperature limits, to support year-round discharge into Unnamed Tributary to Beaver Creek, Class C, a water of limited assimilation capacity, and are developed to meet the applicable water quality standards. Seasonal monthly limits comply with the Clean Water Act requirement that for a particular pollutant the effluent limit must be the more stringent of either TBEL or WQBEL.

B. TBELs & Anti-Backsliding:

CWA Section 301(b) and 402 require technology-based effluent controls or TBELs, set through evaluation of New Source Performance Standards (NSPS), Best Available Technology Economically Achievable (BAT), Best Conventional Pollutant Control Technology (BCT), Best Practicable Technology Currently Available (BPT); and Best Professional Judgment (BPJ) using any reasonable method considering 40 CFR 125.3 criteria.

Anti-Backsliding Requirement

Anti-backsliding requirements of CWA Sections 402(o) and 303(d)(4) and 40 CFR 122.44(l) regulations, summed in DEC TOGS 1.2.1 guidelines, prohibit the relaxation of existing effluent limits in reissued permits, unless an exception is specified. Limits in reissued permits are not less stringent than before, to comply with anti-backsliding, unless for a cited exception. The below describes TBEL and anti-backsliding for each pollutant affected by the modification. Analysis summaries are in the fact sheet's *Pollutant Summary Table*.

Pollutant-Specific TBELs & Anti-Backsliding Analysis

Maximum Flow Limit, Outfall 001. Revision from 0.10 MGD to 0.04 MGD daily maximum for capacity-based monthly discharge limits for ultimate BOD (UOD), discussed under WQBELs.

pH. See WQBELs discussion.

Dissolved Oxygen (DO). See WQBELs discussion.

5-Day Carbonaceous Biochemical Oxygen Demand (CBOD₅). CBOD₅ at Outfalls 001 was reported as 5.6 to 23 mg/l, 4/2013 through 3/2016. Monitoring CBOD₅ allows the calculation of Ultimate Oxygen Demand (UOD), is retained. TBEL-based mass loading reporting at Outfall 001 is retained.

Total Kjeldahl Nitrogen (TKN). TBEL-based monitoring at 1/week for Outfall 001.

Dissolved Oxygen (DO). TBEL-based monitoring at Outfall 001; at the 1/week interval, is retained.

Total Suspended Solids (TSS). The existing effluent limits and monitoring, are retained.

2. WQBELs & Anti-Degradation:

The discharge(s) were evaluated for compliance with 6 NYCRR § 703.3, and § 704.2 (thermal discharge), CWA Sections 101 and 301(b)(1)(C), and 40 CFR 122.44(d)(1) requiring permit limits sufficiently stringent to meet water quality standards and criteria, and consistent with existing waste load allocations (WLAs), for discharge pollutants or parameters at levels likely to cause or contribute to violation of a State water quality standard,.

WQBELs development proceeds by determining pollutants present, identifying applicable water quality criteria, whether reasonable potential exists- needing WQBELs, then calculating WQBEL(s). Receiving water considerations were available effluent dilution, water chemistry, and other pollutant sources. For the modification, stream intermittency and average season temperature were reviewed. WQBELs for allowable dissolved oxygen (DO) is needed as reasonable potential exists that BOD, temperature may violate standards.

Antidegradation Policy: The permit modifications meets New York State implementation of the CWA antidegradation policy (see Antidegradation Policy, Fact Sheet, Fleischmann's Vinegar Co, NY0002585 Permit 2012). The permit has effluent limits which ensure maintenance of the existing beneficial surface water uses.

WQBEL analyses below include any applicable anti-degradation analysis justifying a more stringent water quality standard. Fact sheet Section II-B provides location, water class, dilution, chemistry; and any TMDLs.

Pollutant-Specific WQBEL & Anti-Degradation Analysis:

Flow, Outfall 001. The maximum effluent flow is revised to 0.04 MGD/day, and is allowed only when it will not exceed the monthly effluent UOD limit as described below.

pH, SU. Current DMR monitoring has indicated an effluent pH of 7.1 – 8.2 (SU) over 38 months. 6 NYCRR § 703.3 for Class C surface waters requires that discharge pH be 6.5-8.5. *TOGS 1.3.1- Total Maximum Daily Loads and Water Quality-Based Effluents, Item 5, pg. 8: Principles and Considerations for Waste Assimilation Capacity and Waste load Allocations*, provides that for effluent to low flow/intermittent stream, the applicable pH should match water classification (Class C). Outfall 001 pH limit is indicated as satisfactory and not needing revision.

UOD. Ultimate BOD (UOD) is calculated as $(1.5 \times \text{CBOD}_5) + (4.57 \times \text{TKN})$, where TKN = Total Kjeldahl Nitrogen and CBOD₅ = 5-day carbonaceous biochemical oxygen demand.

The permittee had identified severe operational constraints imposed by the existing 42 mg/l UOD limit, including the ability to discharge solely during the months of March and April (when UOD in the holding pond often exceeded the limit) and no allowance for background flows from Outfall 003, which flow continuously when the plant is operating. The permittee thereby requested a reevaluation of this limit by the Department based upon these and other parameters. Following several meetings with the permittee to determine the operational needs of the facility and the water quality requirements of the receiving water, the permittee submitted a draft technical memorandum on March 14, 2017 to establish a more flexible UOD discharge limit by incorporating upstream non-contact cooling water flows from Outfall 003 in the Streeter-Phelps model used as the basis for establishing UOD limits in the permit and to allow discharge from Outfall 001 year-round.

Using this model, a flow based UOD limit was then calculated for Outfall 001 for each of four Outfall 003 flow rates, based upon a maximum daily Outfall 001 flow rate of 0.04 MGD, the Outfall 003 flow rate, and the calculated maximum temperature of the combined discharges (see table below). Wastewater flows from Outfall 003 were evaluated based on current and projected production rates. A year-round fixed limitation for a collective flow weighted combined discharge temperature of 27.5°C was presumed, based upon the historic maximum temperature operational range of the vinegar acetators. The UOD levels at Outfall 001 are determined by the most recent CBOD5 and TKN measurements for the final lagoon in-place measurement as required by the permit, utilizing the UOD formula provided in the permit. The flow weighted effluent temperature (identified in the permit as Outfall 013) shall not exceed 27.5° C. The flow weighted temperature shall be calculated using the following equation, and shall be reported on the DMR as a daily maximum:

$$\text{Maximum Temperature} = (Q003 * T003 + Q001 * T001) / (Q003 + Q001)$$

Where: Q003 = non-contact cooling water flow, MGD
T003 = non-contact cooling water temperature, ° C
Q001 = treated wastewater flow from the storage lagoon, MGD
T001 = temperature of the treated wastewater from the storage lagoon, ° C

The resulting limits were determined as:

Allowable Maximum UOD Concentrations and Daily Loads, Outfall 001				
Outfall 001 flow:	0.04 MGD (40,000 GPD) maximum			
Outfall 003 flow, MGD	< 0.25	0.25 to 0.50	0.50 to 0.75	> 0.75
Outfall 001 UOD, mg/l	125	204	387	491

Dissolved Oxygen (DO). The allowable effluent DO should be 7.0 mg/l, minimum. 6 NYCRR § 703.3 sets a minimum for Class C surface waters of 4.0 mg/l. The effluent pre-discharge DO levels indicate effluent discharge concentrations. Holding Pond #3 for effluent monitoring DO levels have been reported as above 7.0 mg/l. The permit modification applies a 7.0 mg/l DO minimum as practical for lagoon releases to the intermittent stream, and are therefore determined to be protective of the stream with the admixture of background flows from Outfall 003.

Other Monitoring Parameters

Ammonia as NH₃-N. Monitoring is required for Outfall 001.

Total Kjeldahl Nitrogen (TKN). Outfall 001 TKN for 3/2013-5/2016 was reported as 2.3 to 6.6 mg/l. Outfall 001 monitoring is retained to determine UOD in the effluent.

Total Suspended Solids (TSS) 6 NYCRR § 703.2, Class C surface waters, does not set TSS limits but requires "no impairment of other usages" including fish propagation and survival, with no numerical TSS limits. The previous TBEL-based TSS limit is a 50 mg/l monthly average and a 75 mg/l daily maximum. For 3/2013 to 4/2016 the TSS at effluent Outfall 001 was 8.5-38 mg/l with no exceedances. Existing TSS limits are therefore retained as sufficiently protective, helps track effluent quality, and avoids backsliding.

Mercury. The previous permit did not include mercury limits, a minimization program, or routine monitoring requirements, in accordance with New York State's mercury multiple discharge variance (MDV) in TOGS 1.3.10, and that the detected level was 2.9 ng/l, comparable with background levels. The exemption is retained.

B. Monitoring & Reporting Requirements

Clean Water Act Section 308 and federal regulations of 40 CFR 122.44(i) require that monitoring be included in permits to determine compliance with effluent limitations. Additional effluent monitoring may also be required to generate data for determining if effluent limitations may be required. The permittee is responsible for the conduct of monitoring and for reporting results on DMRs. The permit contains monitoring requirements for the facility. Monitoring frequency is based on the minimum sampling necessary for adequate monitoring of facility performance. For industrial facilities, sampling frequency is based on guidance provided in TOGS 1.2.1.

C. Other Permit Conditions

The following Permit Conditions of the existing permit are not affected by this permit modification, and so are retained: **Best Management Practices (BMPs)**, and **Discharge Notification Act**, and any **Special Conditions**.

D. General Conditions Applicable To All Permits

The permit contains standard regulatory language that is required to be in all SPDES permits. These permit provisions, based largely upon 40 CFR 122 Subpart C and 6 NYCRR Part 750; include requirements pertaining to monitoring, recording, reporting, and compliance responsibilities. These "general conditions" of permits are typically specified, summarized, or referenced on the first and last pages of the permit.

OUTFALL & RECEIVING WATER LOCATION TABLE

Outfall Number	Latitude	Longitude	Receiving Water Name	Water Class	Water Index Number	Major/Sub Basin
001	43° 10' 36.3"/76° 52' 57.8"	43° 10' 36.3"/76° 52' 57.8"	Tributary to Beaver Creek	C(T)	Ont. 82-Beaver Creek & Minor Tribs.	03 / 02
002	43° 10' 36.5"/76° 53' 10.9"	43° 10' 36.5"/76° 53' 10.9"	Groundwater	Class GA	NA	NA
003	43° 10' 35.3"/76° 52' 59.4"	43° 10' 35.3"/76° 52' 59.4"	Tributary to Beaver Creek	C	Ont. 82-Beaver Creek & Minor Tribs.	03 / 02
004	43° 10' 40.5"/76° 53' 03.1"	43° 10' 40.5"/76° 53' 03.1"	Tributary to Beaver Creek, Groundwater	Class C(T), GA	NA	NA

* Shaded rows indicate outfalls for which the revised UOD and Temperature limitations generally apply.

POLLUTANT SUMMARY TABLE(S)

Outfall No. 001	Discharge to Trib. to Beaver Creek from Holding Pond #3 (Lagoon)
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Effluent Parameter (concentration in µg/l and mass in lbs/day unless otherwise specified)	Existing Effluent Quality				TBELs				Water Quality Data & WQBELs					Permit Basis
	Concentration		Mass		Conc.	Mass	Type	PQL	Ambient Criteria	Ambient Background	WQBEL			(T or WQ or NA)
	Avg/Max	95%/99%	Avg/Max	95%/99%					Conc.	Conc.	Conc.	Mass	Type	
Flow Rate, units = GPD	Average	0.06 /0.09			40,000		DA/DM	NA	7Q10 = NA, 30Q10 = , Dilution/Mixing = NA , Hardness = 290					T
pH (SU)	Minimum	7.6 /7.9	Maximum	8.0 /8.1	6.5-8.5		Min/Max				6.5-8.5		Dmin/Dmax	WQ
CBOD ₅	20.9 / 50	68.2 / 125			Monitor	Monitor	DA/DM				TBEL ok.		DA/DM	T
UOD, mg/l, lbs/day	51.9 / 92	131 / 204			See Below	See Below	Daily Max.				Conditional	Conditional	Daily Max.	WQ
TSS	18.4 / 35.8	41.5 / 61			Monitor	Monitor	DA/DM				TBEL ok.		DA/DM	T
TKN	3.2 / 4.1	4.6 / 6.6			Monitor	Monitor	MA				TBEL ok.		MA	T
Dissolved Oxygen, mg/l,	Minimum	7.5 / 12.0	Maximum	12.9/16.7	7.0		DMin/DA				TBEL ok.		DMin/DA	WQ
Temperature, deg. F*	35 / 61	36 / 94			Monitor		DA/DM, deg C				TBEL ok.		Min/Max	T

Permittee: Fleischmann's Vinegar Company, Inc.
 Facility: Fleischmann's Vinegar Company, Inc.
 SPDES No: NY-0002585

Date: 10/16/2017
 Permit Writer: Brian Baker
 PAGE 8 OF 8

* Sampling for permit application.

Allowable Maximum UOD Concentrations and Daily Loads, Outfall 001				
Outfall 001 flow:	0.04 MGD (40,000 GPD) maximum			
Outfall 003 flow, MGD	< 0.25	0.25 to 0.50	0.50 to 0.75	> 0.75
Outfall 001 UOD, mg/l	125	204	387	491

Outfall No. 003	Non-Contact Cooling Water													
Effluent Parameter (concentration in µg/l and mass in lbs/day unless otherwise specified)	Existing Effluent Quality				TBELs				Water Quality Data & WQBELs					Permit Basis
	Concentration		Mass		Conc.	Mass	Type	PQL	Ambient Criteria	Ambient Background	WQBEL			(T or WQ or NA)
	Avg/Max	95%/99%	Avg/Max	95%/99%				Conc.	Conc.	Conc.	Conc.	Mass	Type	
Flow Rate, units = MGD	Average	NA	Maximum	NA	Monitor		Meter	NA	7Q10 = NA, 30Q10 = NA, Dilution/Mixing = NA					T
pH, SU	Minimum	NA	Maximum	NA	Monitor		Range				Monitor		Min/Max	T
Temperature (F)	70.04 / 86.0	88.3/97.63			Monitor		DA/DM, deg C				Monitor		Min/Max	T

* Sampling for permit application.

Outfall No. 013	Calculated Flow Weighted Temperature													
Effluent Parameter (concentration in µg/l and mass in lbs/day unless otherwise specified)	Existing Effluent Quality				TBELs				Water Quality Data & WQBELs					Permit Basis
	Concentration		Mass		Conc.	Mass	Type	PQL	Ambient Criteria	Ambient Background	WQBEL			(T or WQ or NA)
	Avg/Max	95%/99%	Avg/Max	95%/99%				Conc.	Conc.	Conc.	Conc.	Mass	Type	
Temperature (C)	70.04 / 86.0	88.3/97.63			27.5		DM, degC				Monitor		Min/Max	WQ*